

## WHAT IS CLAIMED IS:

1. A method for providing an immune response to hepatitis B surface antigen (HBsAg), in an animal made immunoreceptive to HBsAg, by feeding the immunoreceptive animal with a substance comprising a physiologically acceptable plant material containing hepatitis B surface antigen.

2. The method of claim 1 wherein the animal is made immunoreceptive to HBsAg by feeding the substance to the animal in conjunction with an adjuvant that renders the animal immunoreceptive to HBsAg.

3. The method of claim 1 wherein the animal is made immunoreceptive to HBsAg by immunization against hepatitis B prior to feeding the animal the substance material.

4. A method for boosting an immune response to hepatitis B surface antigen in a human previously having a positive response to primary immunization against hepatitis B which method comprises the human ingesting a substance comprising a physiologically acceptable plant material containing hepatitis B surface antigen.

5. The method of claim 4 wherein the plant material is from a plant that has been genetically altered to express said antigen.

4 6. The method of claim ~~3~~ wherein the human ingests sufficient plant material to provide from about 10 to about 100 micrograms of hepatitis B surface antigen per kilogram of body weight of the human.

5 7. The method of claim ~~4~~ wherein the human ingests sufficient plant material to provide from about 2 to about 5 grams of plant material per kilogram of body weight of the human.

6 8. The method of claim ~~3~~ wherein the human ingests said plant material a plurality of different times, said times being separated from each other by at least 5 days.

7 9. The method of claim ~~4~~ wherein the human ingests said plant material a plurality of different times, said times being separated from each other by at least 5 days.

8 10. The method of claim ~~5~~ wherein the human ingests said plant material a plurality of different times, said times being separated from each other by at least 5 days.

9 11. The method of claim ~~6~~ wherein the plurality of times is three times.

10 12. The method of claim ~~7~~ wherein the plurality of times is three times.

11 ~~13~~. The method of claim ~~10~~<sup>8</sup> wherein the plurality of times is three times.

12 ~~14~~. The method of claim ~~8~~<sup>3</sup> wherein the plant material is a material from a plant of the family Solanaceae.

13 ~~15~~. The method of claim ~~9~~<sup>4</sup> wherein the plant material is a material from a plant of the family Solanaceae.

14 ~~16~~. The method of claim ~~14~~<sup>12</sup> wherein the plant is a potato.

15 ~~17~~. The method of claim ~~15~~<sup>13</sup> wherein the plant is a potato.

16 ~~18~~. The method of claim ~~14~~<sup>12</sup> wherein the plant is a tomato.

19. A physiologically acceptable plant material containing hepatitis B surface antigen.

20. The material of Claim 1 wherein the plant material is tuber material from a potato.